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AMENDMENT TO THE SPECIFICATION

The following Abstract will replace all prior versions of the Abstract in the application.

Processes for forming a filter material that includes coating a filter particle with a coating comprising a lignosulfonate, carbonizing the coating, and activating the coating. The filter particles may include a variety of filter particles, including but not limited to fibers, granules, and screens, and be formed from a variety of materials, such as metals, metal alloys, carbon, ceramic, or glass. Also, the lignosulfonate-coated filter particles may include a large amount of mesopore and/or macropore volume when carbonized and activated. One exemplary process for forming a filter material includes diluting ammonium lignosulfonate with water, mixing the solution with milled glass fibers, removing the excess lignosulfonate solution from the fibers, drying the lignosulfonate coated glass fibers at 65°C for 12 h, carbonizing the coated glass fibers in a furnace ramped to 700°C with a rate of 7°C/min for 30 min in a flowing nitrogen atmosphere, and activating the carbonized coated glass fibers in a furnace at 750°C for 6 h in a flowing nitrogen/steam atmosphere.